CLAIMS

1. A urethane resin for an optoelectric conversion element sealer, which has:

1) a refractive index of 1.45 or more as measured by using a D line from a helium light source,

2) a glass transition temperature (Tg) of 75°C or more, and

3) a ΔE of 1.5 or less as measured after irradiation for 600 hours by a sunshine weatherometer using a carbon arc lamp.

2. The resin according to claim 1, which has a ΔE of 1.5 or less after treated for 300 hours in a thermostatic chamber having a relative humidity of 90% and a temperature of 80°C.

3. The resin according to claim 1 or 2, wherein the content of sulfur atoms is 500 ppm or less.

4. The resin according to any one of claims 1 to 3, wherein the content of alkali metal atoms is 10 ppm or less.

5. A urethane resin composition for an optoelectric conversion element sealer comprising a component (A)

containing a compound having at least two isocyanate groups and a component (B) containing a compound having hydroxyl groups, wherein the compound having isocyanate groups in the component (A) is at least one compound selected from the group consisting of:

(i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,

(ii) an aliphatic polyisocyanate,

(iii) an alicyclic polyisocyanate, and

(iv) derivatives of the polyisocyanates (i) to (iii).

6. The composition according to claim 5, wherein the compound having isocyanate groups is a modified isocyanurate or prepolymer of the polyisocyanates (i) to (iii).

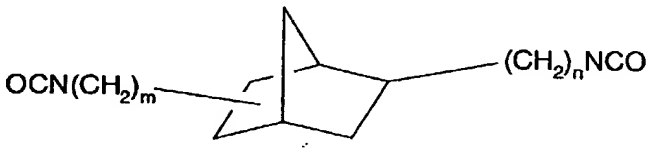
7. The composition according to claim 5 or 6, wherein an initial mixing viscosity at the time of mixing the component (A) and the component (B) together at 20°C is in a range of 10 to 10,000 mPa·s.

8. The composition according to any one of claims 5 to 7, wherein a time required for a viscosity after mixing of the component (A) and the component (B) to become twice

as much as the initial mixing viscosity is in a range of 2 to 20 hours.

9. The composition according to any one of claims 5 to 8, wherein the compound having isocyanate groups is a polycyclic alicyclic polyisocyanate or its modification.

10. The composition according to claim 9, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the following general formula [I]:



[I]

wherein m and n each independently represent an integer of 1 to 5.

11. The composition according to claim 10, wherein the polycyclic alicyclic polyisocyanate is a polycyclic alicyclic diisocyanate represented by the formula [I] wherein both m and n are 1.

12. The composition according to claim 5, wherein the compound having isocyanate groups is at least one compound selected from the group consisting of

diisocyanatomethylbenzene, bis(1-isocyanato-1,1-dimethyl)benzene, 4,4'-diisocyanato-dicyclohexylmethane, 1-isocyanato-3,5,5-trimethyl-3-isocyanatomethylcyclohexane and bisisocyanatomethylcyclohexane.

13. The composition according to any one of claims 5 to 12, wherein the compound having hydroxyl groups is a compound having at least two hydroxyl groups.

14. The composition according to claim 12 or 13, wherein the content of alkali metal atoms in the compound having at least two hydroxyl groups is 10 ppm or less.

15. The composition according to any one of claims 5 to 14, which has a glass transition temperature of at least 75°C after cured.

16. The composition according to any one of claims 5 to 15, which has a refractive index of 1.45 to 1.80 as measured by using a D line from a helium light source after cured.

17. The composition according to claim 5 or 16, which has

a ΔE of 1.5 or less as measured after irradiation

for 600 hours by a sunshine weatherometer using a carbon arc lamp after cured,

a ΔE of 1.5 or less after treated for 300 hours in a thermostatic chamber having a relative humidity of 90% and a temperature of 80°C,

a content of sulfur atoms of 500 ppm or less, and

a content of alkali metal atoms of 10 ppm or less.

18. An optoelectric conversion device obtained by curing a resin composition comprising a component (A) containing a compound having isocyanate groups and a component (B) containing a compound having hydroxyl groups to seal an optoelectric conversion element, wherein the compound having isocyanate groups in the component (A) is at least one compound selected from the group consisting of:

(i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,

(ii) an aliphatic polyisocyanate,

(iii) an alicyclic polyisocyanate, and

(iv) derivatives of the polyisocyanates (i) to (iii).

19. The device according to claim 18, wherein the optoelectric conversion element is a light-emitting or a light-receiving element.

20. The device according to claim 19, wherein the optoelectric conversion element is a light-emitting diode.

21. A method for producing a urethane resin for an optoelectric conversion element sealer which comprises heating a resin composition comprising a component (A) containing a compound having isocyanate groups and a component (B) containing a compound having hydroxyl groups to react and cure the composition, wherein the compound having isocyanate groups in the component (A) is at least one compound selected from the group consisting of:

(i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,

(ii) an aliphatic polyisocyanate,

(iii) an alicyclic polyisocyanate, and

(iv) derivatives of the polyisocyanates (i) to (iii).

22. A method for producing an optoelectric conversion device which comprises sealing an optoelectric conversion element with a resin composition comprising a component (A) containing a compound having isocyanate groups and a component (B) containing a compound having hydroxyl groups by heating the resin composition to react and cure the composition, wherein the compound having isocyanate

groups in the component (A) is at least one compound selected from the group consisting of:

(i) an aromatic polyisocyanate having a structure in which any isocyanate groups are not directly bonded to a benzene ring,

(ii) an aliphatic polyisocyanate,

(iii) an alicyclic polyisocyanate, and

(iv) derivatives of the polyisocyanates (i) to (iii).

23. The method according to claim 22, wherein the optoelectric conversion element is a light-emitting or a light-receiving element.

24. The method according to claim 23, wherein the optoelectric conversion element is a light-emitting diode.